National Heart, Lung, and Blood Institute

ACTION ALERT

Publication Availability Notice

Educational Strategies To Prevent Prehospital Delay in Patients at High Risk for Acute Myocardial Infarction

Highlights of a new report from the National Heart Attack Alert Program. Look on the back for information on obtaining the full report and a shorter journal reprint.

Dramatic benefit in reducing mortality from acute myocardial infarction (AMI) has been demonstrated with early administration of thrombolytic therapy. In many patients, administration of thrombolytic therapy within 1 hour of symptom onset prevents or greatly decreases myocardial damage.

Despite the potential benefit of early treatment, major trials indicate that only 3 to 11 percent of heart attack patients are treated within the first hour of symptom onset. Studies document that the most common reason for treatment delay is that the patient does not seek care promptly. The median time delay in seeking care after the onset of symptoms of an AMI ranges from 2 to 6.4 hours.

To help address this issue, the National Heart Attack Alert Program (NHAAP)* Coordinating Committee convened a multidisciplinary Working Group on Strategies To Minimize Prehospital Delay in Patients at High Risk for Acute Myocardial Infarction. This working group has produced a report that describes the high-risk patient population, predictors of patient delay, and recommendations for these patients about early recognition of AMI symptoms and appropriate steps to take.

Rationale for Targeting a High-Risk Group

Approximately 8 million Americans have coronary heart disease (CHD), about 3 million have cerebrovascular disease, and about 2 million have peripheral vascular disease. Patients with established CHD, clinical atherosclerotic disease of the aorta or peripheral arteries, or clinical cerebrovascular disease are at high risk for subsequent myocardial infarction or CHD death. About 50 percent of all myocardial

* The NHAAP is a national education program supported by the National Heart, Lung, and Blood Institute.

infarctions and at least 70 percent of CHD deaths occur in individuals with prior manifestations of cardiovascular disease. The risk for subsequent myocardial infarction and death in patients with established CHD (or other clinical atherosclerotic disease) is fivefold to sevenfold higher than for the general population.

Predictors of Prehospital Delay

Researchers have found that some sociodemographic characteristics, including older age and female gender, are associated with increased delay times in seeking care for AMI. Delays appear to be associated with race (e.g., African Americans) and low socioeconomic status, although this is not a consistent finding.

Researchers have also considered the role of physicians and other health care providers, family members and significant others, and friends in helping patients make decisions to come to an emergency department. The majority of patients consult someone, either a layperson or a physician, prior to calling 9-1-1 or taking other transportation to the hospital. If patients call a physician, delay times are significantly increased. (Physicians and other health care providers may not be readily available at the time of the call. Office or telephone service staff members may try to reach them or give advice and reassurance, thereby increasing delay.) If patients consult a friend, coworker, or stranger, they come to the emergency department more quickly than if they consult a family member or significant other.

Recommendations for High-Risk Patient Education

Who: High-Risk Patients

Education should be targeted at patients with established CHD, clinical atherosclerotic disease of the aorta or peripheral arteries, or clinical cerebrovascular disease. These include patients with a history of:

- Myocardial infarction
- Angina
- Coronary artery bypass surgery
- Angioplasty
- Substantial carotid atherosclerosis
- Peripheral vascular disease

Those patients who are most likely to delay (e.g., the elderly and women) should be particularly targeted.

What: Message Content

Educational messages to high-risk patients include three essential components: information, emotional issues, and social factors.

Patients should be given *information* about the typical and atypical symptoms of AMI and the action steps to take if they experience those symptoms. It should be stressed that symptoms may come on gradually and may be vague or intermittent. If a patient has had a previous heart attack, it should be explained that the symptoms of a subsequent heart attack may be different. Instructions should be given about medications (e.g., nitroglycerine and aspirin). Patients should be encouraged to quickly activate the emergency medical services system (e.g., by calling 9-1-1 or their seven-digit emergency number). Health professionals may wish to use a tool such as the one on page 3 to educate high-risk patients about AMI.

Patient education messages should address *emotional issues* surrounding an AMI. A patient's natural inclination is to delay and attribute AMI warning signs to a noncardiac cause. To counter this, the reward of acting quickly and getting definitive treatment before irreversible myocardial damage occurs must be underscored. Positive messages about the salvage of cardiac muscle and survival when treatment begins rapidly are potentially more effective than negative messages about delay and the possibility of sudden death.

Patient education should acknowledge the *social factors* surrounding the decision to seek treatment. The majority of patients consult a family member or significant other about their symptoms. Family members or significant others should be included in all education and counseling and have a good understanding of the nature of AMI symptoms and the importance of calling emergency medical services quickly.

How: Educational Techniques

Rehearsal is one strategy to deal with the anticipated denial patients experience as part of

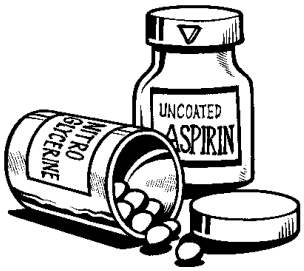
What To Do If You Have One or More Heart Attack Warning Signs

Patient's Name: _____

Physicians now have treatments that can stop heart attacks and lessen damage to the heart. To make sure you can benefit from these treatments, you need to act promptly if you begin to experience symptoms that might signal a heart attack.

1. This is what you may feel:

- Chest pain, discomfort, or pressure
- Left arm pain or discomfort
- Pain radiating to your neck or jaw
- Shortness of breath
- Sweating
- Upset stomach
- Discomfort in the area between your breastbone and navel
- A sense of dread
- Other: _____



2. Medication instructions:

- Chew one 325 mg tablet of uncoated adult aspirin.
- Place one tablet of nitroglycerin under your tongue as soon as you feel discomfort. Take a second tablet if the discomfort does not go away in 5 minutes. Take a third tablet after 5 more minutes if the discomfort does not go away.
- Other: _____

3. If the symptoms stop, call your physician at: _____

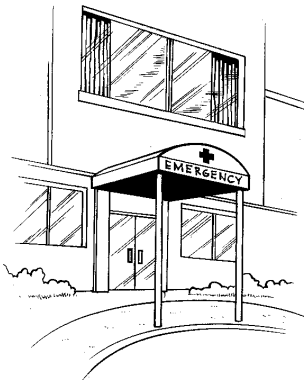
4. If symptoms continue for more than 15 minutes, call the emergency medical services phone number below immediately. (Often this is 9-1-1, but you should check to make sure.) Never wait longer than 15 minutes.

At home, the emergency phone number is: _____

At work, the emergency phone number is: _____

At _____, the emergency phone number is:

_____



5. Know the location of the nearest 24-hour emergency department.

At home, the closest emergency department is: _____

At work, the closest emergency department is: _____

At _____, the closest emergency department is:

_____

Place this form next to the phone, near your other emergency numbers!

Signed: _____ M.D./R.N.

the emotional response. Since symptoms can increase anxiety, patients should be encouraged to rehearse their response to a possible AMI at less stressful times so that the reaction becomes automatic. Just as individuals practice fire or disaster drills in the work setting or rehearse actions in case of a home fire, reviewing feelings and optimal behaviors in response to AMI symptoms may increase the likelihood that appropriate steps will be taken despite an intense emotional reaction.

Finally, all office staff members in health care settings (particularly receptionists or others with whom the patient is likely to have initial contact) should understand and support the educational program discussed here. Practitioners should provide clear instructions and training to the staff about actions to take when a patient with cardiac symptoms calls or walks into the office seeking advice. Precious time must not be wasted while the staff member tries to contact a physician who is temporarily unavailable. The physician (or policymaking committee in a managed care setting) must devise a triage system in the office/clinic to quickly identify and treat such patients.

Summary

Early medical therapy can reduce the morbidity and mortality from AMI. Physicians and other health care providers play an important role in reducing treatment delay. Patients with known CHD, peripheral vascular disease, or cerebrovascular disease are at high risk for future AMI. This high-risk group needs to be told clearly what symptoms they might experience during a coronary occlusion, what steps to take, and to call emergency medical services. They should be told about the importance of getting to an appropriate facility quickly, the treatment options available when presenting early, and the rewards of early treatment in terms of improved quality of life. These instructions need to be reviewed frequently and reinforced with appropriate written material and with wallet cards.

No single intervention, no matter how carefully designed and implemented, will be sufficient to alter the individual's propensity to delay. A consistent message, delivered regularly, is needed to ensure increased knowledge and appropriate behavioral changes. Impediments to early treatment should be identified and, when possible, modified with an appropriate action plan. Family members and significant others should be included in all instruction since they play an important role in increasing or decreasing the time to treatment.

Copies of the full working group report, *Educational Strategies To Prevent Prehospital Delay in Patients at High Risk for Acute Myocardial Infarction* (NIH Publication No. 97-3787, $3.00) and the journal reprint, *The Physician's Role in Minimizing Prehospital Delay in Patients at High Risk for Acute Myocardial Infarction: Recommendations from the National Heart Attack Alert Program* (NIH Publication No. 55-823, $1.50)—a shorter version of the full report, published in the April 15, 1997, issue of *Annals of Internal Medicine*—can be at ordered by contacting:

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Important: Whichever medium you use to place an order, please include the full NIH publication number to ensure that you receive the correct document.

The full report can be downloaded from the NHLBI Web site at http://www.nhlbi.nih.gov/nhlbi/cardio/heart/prof/hattkhc.htm

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